

**PIPEFITTER  
WG-4204-10**

**METAL TRADES**

**I. POSITION AND ORGANIZATION INFORMATION****Position:**

Pipefitter, WG-4204-10

**Purpose of position:**

The primary purpose of this job is to install, modify, troubleshoot, maintain, and repair industrial or domestic high-temperature water and high-pressure piping systems and equipment.

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**Organization:**

Maintenance Branch, Facilities Mgmt Div

**Organization goals:**

The purpose of this branch is to provide emergency and scheduled maintenance and repair services.

**II. MAJOR DUTIES****B. Duty:**

Installs, modifies, and repairs new and existing high-pressure piping systems and equipment such as steam heating, steam generation, and hydraulic systems, steam generators, flash and expansion tanks, condensate, vacuum, and circulating pumps, and radiators. Measures and determines proper piping, valves, and fittings required for the job; insulates pipes; and measures required cuts, threads, reams, etc. Cuts route openings; places hangers for correct pitch and elevation; and installs braces and supports. Maintains records and documents actions. (20%)

**Tasks:**

1. Installs and maintains assigned systems and equipment and makes appropriate repairs and modifications as needed.
2. Ensures products meet accepted trade standards and practices.
3. Prepares records of actions taken and assures documentation is signed and coordinated.

**C. Duty:**

Plans and lays out installation, repair, and/or modification of high pressure piping systems and equipment applying and interpreting information in blueprints, charts, and sketches. Determines system routing, placement, pitch, elevation, and operation and calculates pipe, joint, and valve sizes needed to support system pressures(s). (20%)

**Tasks:**

1. Develops plans in a manner which promotes both effectiveness and efficiency.
2. Determines the need for modifications and repairs.

3. Calculations for plans are consistently accurate.

**D. Duty:**

Troubleshoots/inspects high-pressure piping systems and equipment and determines need for modification and/or repair to insure proper and safe operation. (20%)

**Tasks:**

1. Conducts inspections of and troubleshoots piping systems, identifying irregularities and existing and/or potential problems.

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2. Identifies source and nature of system malfunctions. Uses diagnostic techniques, e.g., tracing steam, to locate problem.

**E. Duty:**

Utilizes safety practices and procedures following established safety rules and regulations and maintains safe and clean work environment. (20%)

**Tasks:**

1. Operates equipment in a safe manner, applying established safety rules and regulations to minimize minor violations and to avoid major violations due to employee error or negligence.

2. Informs the supervisor of accidents and/or damage to supplies or equipment or of any observed unsafe practices and/or procedures in a timely manner in accordance with established policies and procedures.

**F. Duty:**

Uses and maintains tools. (20%)

**Tasks:**

1. Uses, maintains, and accounts for all types of hand and power tools such as wrenches, pipe threaders, cutters, dividers, chalk lines, drills, grinders, and ground fault interrupter equipment, as required, to accomplish assigned duties.

**G. Other Work Requirements**

1. The employee may be required to work overtime.
2. The employee may be recalled to duty.
3. This position requires the employee to drive a motor vehicle. An appropriate, valid driver's license is required for the position.

**III. CLASSIFICATION FACTORS**

**Factor 1. Knowledge**

1. -- Knowledge of how various high-pressure piping systems and equipment such as steam heating, steam generation, and vacuum systems, radiators, and circulating pumps, are installed and operate. For example, the incumbent must know how relief valves, check valves, pressure regulators, expansion joints, and other pressure supporting and controlling devices are installed and how they operate to control increases and decreases in pressure, flow, circulation, and expansion in the systems.

-- Ability to plan and lay out the installation, modification, and repair of various new and existing piping systems and equipment. For example, the pipefitter must be able to lay out and install various kinds of piping, risers, and flexible branches at the proper level and incline; determine the placement and elevation and install steam generators, vacuum and condensate pumps, and radiators; and replace heat exchangers, flash and expansion tanks, and automatic and manual control valves.

-- Ability to interpret and apply building plans and blueprints, and to use shop mathematics to lay out angles, arcs, and circles.

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-- Skill in any of the accepted trade methods and techniques, for example, figuring pipe, joint, and valve sizes needed to support pressures of systems, aligning pipes, valves, fittings, and joints for accurate match, and installing proper braces and supports to control movement and vibration and allow for expansion and contraction.

-- Skill in the use of tools and equipment such as sliding squares, measuring tapes, dividers, chalk lines, plumb bobs, templates, star drills, grinders, flangers, hand and power pipe threaders and cutters, and pipe wrenches.

#### Factor 2. Responsibility

The pipefitter receives assignments orally and works through work orders, building plans, and blueprints. Independently plans and lays out the routing, placement, pitch, incline, and elevation of systems and equipment; figures pressures in systems and sees that the piping, valves, fittings, and equipment are proper for the work. Installations, modifications, and repairs are completed with little or no check during their progress or upon completion. Tests systems and equipment after completing work for proper circulation, flow, pressure, and leak-free joints. Overall work is checked by the supervisor to see that it meets accepted trade standards.

#### Factor 3. Physical Effort

Employee makes repairs and installations from ladders, scaffolding, platforms, and other hard-to-reach places. Must stand, stoop, bend, kneel, climb, stretch, and work in tiring and uncomfortable positions. Frequently lifts parts and equipment that weigh up to 50 pounds. Occasionally lifts items that weigh over 50 pounds with assistance from other workers.

#### Factor 4. Working Conditions

The work is done inside and outside, and is usually dirty, dusty, and greasy. The pipefitter is sometimes required to make installations and repairs in areas where bad smelling fumes are present. There is frequent exposure to the possibility of uncomfortable heat conditions. The pipefitter is frequently exposed to the possibility of strains, cuts, scrapes, bruises, burns, and infections. The incumbent is occasionally exposed to the possibility of broken bones. Employee uses and maintains prescribed safety/protective clothing and equipment such as the following: hard hat, safety glasses, shoes, belts, face shields, respirators, gas masks, ear protection devices, gloves, coveralls, and foul weather gear.

## IV. CLASSIFICATION SUMMARY

## In this position:

Duty B. 20% WG-4204-10 Pipefitter  
Installs Piping Systems

Duty C. 20% WG-4204-10 Pipefitter  
Plans Installation

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Duty D. 20% WG-4204-10 Pipefitter  
Troubleshoots Piping Systems

Duty E. 20% WG-4204-10 Pipefitter  
Utilizes Safety Practices

Duty F. 20% WG-4204-10 Pipefitter  
Uses and Maintains Tools

OPM Job Grading Standard for Pipefitter, WG-4204, TS-6 dated March 1969.

Grade: WG-10